CHAPTER - V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

It is important to predict with high degree of probability whether or not a young sportsperson will be able to achieve excellence performance in a given sport. At international level, there has been some thrust on research to study and predict anthropometric and physical performance factors in various games and sports, however, not enough research studies have concentrated on prediction of performance factors, especially in the game of cricket, and whatever research has been done on the subject does not point to any well established model for predict of performance. It is necessary, not only for proper selecting of sportspersons, who are most promising for the game, but also to select most variable tools of training to help players to achieve thesis optimal capacities.

The physical and performance characteristics of adolescent club volleyball players. Twenty nine adolescent girls aged 12 to 17 years were participants in this investigation. All athletes were members of a competitive volleyball club. The following group values fat percentage, lean body mass, modified sit and reach shoulder rotation, isometric hand grip, isometric leg strength, vertical jump, standing broad jump, 1-minute sit ups, shuttle run, stork stand, serving velocity and spiking velocity. For purpose of analysis, players
were divided into 2 age groups: 12 to 14 years and 15 to 17 years. Significant differences were found between age groups. Our results suggest that age, experience, lean body mass, shoulder, hip, and thigh girth, strength and balance are key physical performance characteristics of adolescent girls who play volleyball. Potentially, this type of information will allow coaches and athletes. A total sample of 304 athletes was selected from first class clubs related to four common sports (football, handball, volleyball and basketball) and compared with 53 non-athlete adults. Weight, height, mid arm circumference and skin fold thickness were measured to assess their body composition. The findings revealed that there were differences in body composition among athletes according to the type of sport. Basketball and volleyball players were the tallest athletes, while handball players were the heaviest ones. Skin fold thickness measurements showed that basketball and handball players have more subcutaneous fat than other athletic groups. As compared with non-athletes, the Bahraini players had higher means for height, weight, sub scapular, suprailliac thickness and mid arm circumference (Melrose, et al.).

**STATEMENT OF THE PROBLEM**

The present research problem has been stated as under:

“Prediction of Anthropometric Measurements and Physical Fitness Components to the Performance of Women Cricket Players.”
OBJECTIVES

7. To examine the relationship of selected anthropometric variables and performance of women cricket players of different categories.

8. To predict the performance of women cricket players on the basis of selected anthropometric variables.

9. To predict the performance of women cricket players on the basis of selected physical fitness variables.

10. To find out relationship between selected physical fitness variables and performance of women cricket players of different categories.

11. To find out relationship between combination of two or more selected anthropometric variables and performance of women cricket players of different categories.

12. To examine relationship between combination of two or more selected physical fitness variables and performance of women cricket players of different categories.

HYPOTHESES

7. There would be significant relationship between selected anthropometric variables and performance of women cricked players of different categories.

8. The Performance of women cricket players (of different categories) can optimally be predicted on the basis of selected anthropometric variables.
9. There would be significant relationship between combination of two or more selected anthropometric variables and performance of women cricket player of different categories.

10. There exists significant relationship between selected physical fitness variables and performance of women cricket players of different categories.

11. The performance of women cricket players can optimally be predicted on the basis of selected physical fitness variables.

12. There would be significant relationship between combinations of two or more selected physical fitness variables and performance of women cricket players of different categories.

**DELIMITATIONS**

7. The study was delimited to women cricket players in the age group of 18 to 25 Years.

8. The study was delimited to those players who have participation North-East Zone women cricket competition.

9. The sample of study was consisting of 200 women cricket players.

10. The data was collected during the session of 2008-2009.

11. The study was restricted to the physical fitness variables (Speed, Flexibility, Endurance, Agility and strength).

12. The study was restricted to anthropometric variables of length, width and circumferences of body parts.
SELECTION OF SUBJECTS

The subjects for the present study consist of cricket players. Cricket players who had participated North-East Zone women cricket competition. The study was confined to the players from northern and eastern universities. Sample of the study was consisting of 200 women cricket players during the session 2008-2009, Amritsar. The study was delimited to their playing categories such as all rounder, batsmen, medium pacer, spin bowler and wicket keeper. They were administered standardized anthropometric, physical fitness and performance level test.

COLLECTION OF DATA

For this study cricket players of different playing categories have to go through from 25 anthropometric and 5 physical fitness measurements. All the anthropometric and physical fitness measurements will be taken with care and precision. Investigator was taking the co-operation of coaches to collect the data. Each test was properly explained and demonstrated to the cricket players. All the anthropometric measurements were taken in morning in minimum clothing. All the measurements were take on the right side of the subject.

SELECTION OF VARIABLES

In consultation with the experts in the field, minutely going through the literature available and considering the feasibility criteria in mind, especially the availability of equipment, the following
anthropometric measurements were taking on right side of all the subjects by using the standard technique of Heath and Carter (1967) method. The following independent and dependent variables seem to contribute to the performance of women college level cricket players were selected as variables for the study.

1. Anthropometric Measurement
2. Physical fitness components
3. Playing ability of cricket

**A. Independent variables**

1. Anthropometric measurement  
2. Physical fitness

**B. Dependent variables**

1. Playing abilities of cricket players

**A. Independent Variables**

1. Age
2. Body weight

**Length or Height of Body parts (cm):**

3. Standing Height
4. Upper Arm Length
5. Lower Arm Length
6. Total Arm Length
7. Total Leg Length
8. Foot Length
**Diameter (cm):**

9. Humerus bicondylar
10. Femur bicondylar
11. Wrist
12. Hand
13. Hip
14. Ankle
15. Foot Width

**Body Circumferences (cm)**

16. Upper arm circumference relaxed
17. Upper arm circumference flexed
18. Chest circumference inspiration
19. Chest circumference expiration
20. Wrist Circumferences
21. Waist Circumferences
22. Hip Circumferences
23. Thigh Circumferences
24. Calf Circumferences
25. Ankle Circumferences

**Physical Fitness**

26. Speed
27. Flexibility
28. Endurance
29. Agility
30. Strength
B. Dependent Variables

Performance in Cricket

All rounder, Batsmen, Medium pacer, Spin bowler and Wicket keeper

STATISTICAL PROCEDURE

The relationship between selected anthropometric and Physical (independent) variables and performance (dependent variables) were established, for each event, by computing Pearson’s Product Moment Coefficient of Correlation.

In this chapter the data obtained from 200 women cricket players on selected anthropometric and physical variables and performance level in cricket playing in different categories as judged by a panel of judges had been treated statistically and results were presented in order to test the hypotheses formulated for the investigation. Data was analyzed using Pearson's Product Moment Coefficients of correlation, multiple correlations and Multiple Regression Analysis. Multiple Regression Analysis was computed to find out the contribution of each anthropometric variable and physical fitness variables in predicting performance of women cricket players.
CONCLUSIONS

Within the limitations identified and on the basis of the results of the study, the following conclusions were drawn:

1. The anthropometric variables namely age, body-weight, height, upper arm length, lower arm length, total arm length, total leg length, wrist diameter, humeres bicondular, femure bicondyules, hand diameter, wrist circumference, thigh circumference, calf circumference had shown significant relationship, though of varying magnitude, with performance in different category of the study.

2. The physical fitness variables namely speed, flexibility, endurance, agility and strength had shown significant relationship, though of varying magnitude with performance in different category of the study.

3. Some to the selected anthropometry variables were found significantly related to performance in majority of the different category of the study as mentioned below:
   (i) Age, upper arm length, lower arm length, total arm length, total leg length, humeres bicondylar, femure bicondylar, wrist diameter, hand diameter were showing significant relationship with performance in different categories.
   (ii) Hip diameter had indicated significant relationship with performance in different categories except batsmen and spin bowler.
(iii) Ankle circumference had shown significant relationship with performance in all rounder, batsmen and wicket keeper.

4. It was observed from the results that some of the selected anthropometric variables had shown significantly relationship with performance in one or more of the different categories as given below:

(i) Height had shown significant relationship with performance in all rounder, medium pacer and wicket keeper.

(ii) Ankle diameter had shown significant relationship with performance in medium pacer, foot length was seen significantly related to performance in medium pacer.

5. Multiple R analysis revealed that predictions regarding performance in different categories can be made, by developing multiple regression equations, on the basis of selected anthropometric variables and physical fitness variables.

6. Results of the multipleR analysis also indicated that magnitude of independent contribution of each predictive (anthropometric, physical fitness) variables, towards variance of performance score (criterion variables) towards variance of performance score (criterion variables) for different categories separately, can be calculated with reasonable degree of accuracy.
SUGGESTIONS FOR FUTURE RESEARCH

After the completion of the present research work, the investigator has come to this understanding that work on prediction of Anthropometric measurements and Physical fitness components to the performance of women cricket player could be further probed into the following suggestions can be put forth:

1. The present study was north-east zone women cricket competition only.

2. The present study was conducted on north-east zone women cricket players. A similar study is also possible on north-east zone Boys cricket player, under-14 boys cricket player.

3. It is also suggested that similar type of study should be conducted comparing the north-east zone women cricket players of some other zone of the country.

4. A similar comparative study between coaches of different games, athletes and sportspersons may also be conducted.

5. A similar type of comparative study may be suggested between Indian and Foreign women cricket players.

6. Anthropometric measurements and physical fitness variables in relationship to performance of women cricket players may also be included to further extend the scope of the study.
RECOMMENDATIONS

On the basis of analysis and conclusions made the following recommendations are made within the limitations and scope of the study.

1. The coaches and teachers of physical education may recognize the fact that height is an important factors and may be considered as essential factors for selecting potential talent for women cricket players.

2. For women cricket players arm length has shown to be an important factors and may be recognized as an essential factor for selecting potential talent.

3. For women cricket players speed, flexibility, agility and strength may be considered important factors for selecting potential players, and as important training factors for the overall enhancement of performance.

4. For women cricket players height, arm length, leg length, speed, strength as measured with 50 meter dash run and throw the cricket ball may be considered in the proper selection and training of players for enhancing performance.

5. A similar study may be conducted using high performance and employing more extensive anthropometric and physical variables including some psychological factors.
6. A longitudinal study may be conducted employing players of different ages and performance levels to determine factors that may be used for spotting talent and may not be modified with training and those factors that may predict performance but may otherwise be modifiable as the player’s training experience increases.